

## **Historic, archived document**

Do not assume content reflects current scientific knowledge, policies, or practices.



Reserve  
aHD166  
.L48  
1982

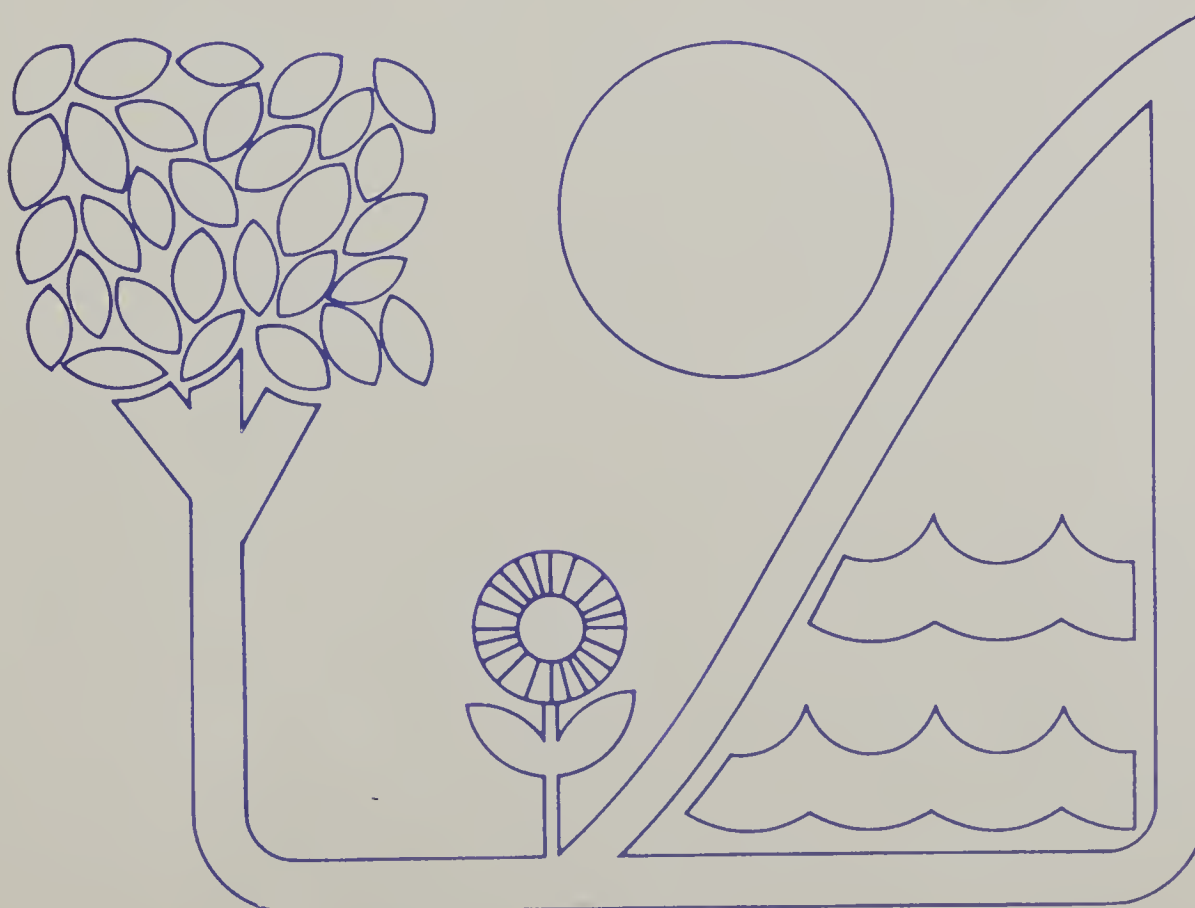
# STAFF REPORT

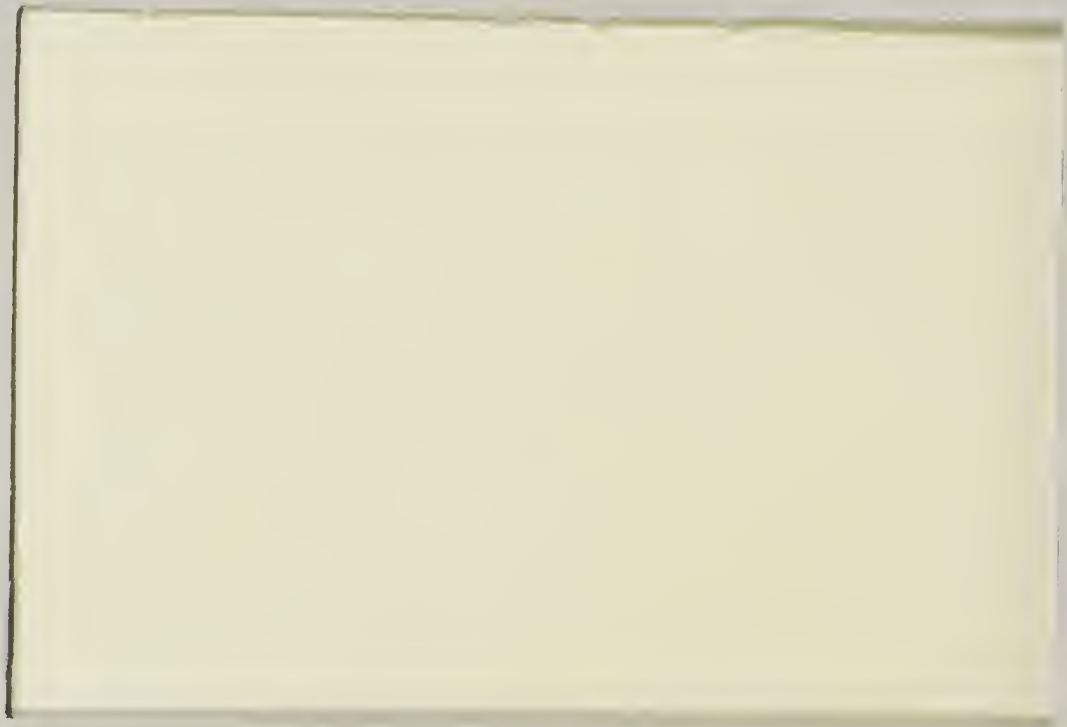


## NRE

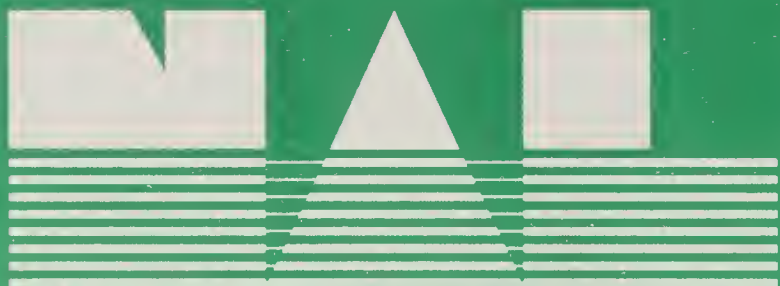
Economic  
Research  
Service

United States  
Department  
of  
Agriculture

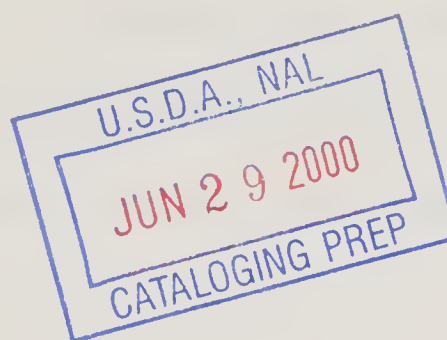




**United States  
Department of  
Agriculture**



**National Agricultural Library**



LAND CLEARING INVESTMENT SURVEY, 1975-77  
A REPORT ON A LANDOWNERSHIP FOLLOW-ON SURVEY

Douglas Lewis

August 1982

Natural Resource Economics Division  
Economic Research Service  
U.S. Department of Agriculture  
Washington, D.C. 20250



LAND CLEARING INVESTMENT SURVEY, 1975-77 -- A REPORT ON A LANDOWNERSHIP  
FOLLOW-ON SURVEY. By Douglas Lewis, Natural Resource Economics Division,  
Economic Research Service, U.S. Department of Agriculture, Washington, D.C.  
20250, ERS Staff Report AGES 820728.

#### ABSTRACT

Over 10.6 million acres were cleared for agricultural use in the United States during 1975-77 by 317,500 ownership units. These owners cleared an average of 33 acres at an average cost of about \$175 per acre. Total investment in clearing exceeded \$1.5 billion for the 1975-77 period. About 6 million acres were cleared in the Southern Plains, Appalachian, and Southeast regions. Pasture and rangeland was an important use of land, both before and after clearing.

Key Words: Land, Clearing, Land use, Investment, Landowners.

\* \* \* \* \*  
\* This paper was prepared for limited distribution to the \*  
\* research community outside the U.S. Department of \*  
\* Agriculture. \*  
\* \* \* \* \*

## TABLE OF CONTENTS

	Page
Introduction . . . . .	1
The Follow-on Survey . . . . .	2
Survey Highlights . . . . .	6
Tabular Data for the United States from the Survey . . .	12
Appendix 1. Land Clearing Investment Survey Questionnaire . . . . .	24
Appendix 2. Farm Production Regions . . . . .	30



# LAND CLEARING INVESTMENT SURVEY, 1975-77

## A Report on a Landownership Follow-on Survey

### INTRODUCTION

This report is based on a portion of the Resource Economics Survey, a 1978 survey of landowners in the United States, conducted by the Natural Resource Economics Division (NRED) of the Economic Research Service (ERS), U.S. Department of Agriculture. The Resource Economics Survey was comprised of a 12 part package to collect interrelated data on and about land resources.

The first part of the package, the Soil Conservation Service's 1977 National Resource Inventory, provided data on the use and quality of the land. The second part of the package, the 1978 Landownership Survey, provided information on land owners -- what, where, and who they are. The results of this landownership survey have been summarized by James A. Lewis. 1/

The 1978 Landownership Survey (LOS) also contained a series of questions concerning land transactions, capital expenditures, land use changes and other land management practices. These questions were used as screening questions to identify prospective respondents for a series of ten follow-on questionnaires. These ten follow-on questionnaires -- each sent to a subsample of the respondents to the LOS -- complete the 12 part Resource Economic Survey. In addition to this Land Clearing Investment follow-on survey, the others included: 1) Land Purchases and Acquisitions; 2) Land Sales and Transfers; 3) Additions

---

1/James A. Lewis, LANDOWNERSHIP IN THE UNITED STATES, 1978. Agricultural Information Bulletin No. 435. Natural Resource Economics Division, Economics, Statistics, and Cooperatives Service; U.S. Department of Agriculture, Washington, D.C., April 1980.

to Cropland; 4) Cropland Acreage Reduction; 5) Land Drainage Investment; 6) Investment in Conservation Structures; 7) Changes in Conservation Practices (conservation disinvestment); 8) Irrigation Investment; and 9) Irrigation Disinvestment.

Screening questions on the LOS determined if a landowner had engaged in a particular activity during 1975, 1976, or 1977. By using the screening question, the maximum amount of data was obtained with the shortest questionnaire possible and only those respondents that reported a particular activity were surveyed for that activity in the LOS follow-on surveys. The 1975-77 time period was selected as the longest time period for which accurate information could likely be obtained. More than one year was used in order to obtain more observations of a particular activity and improve the reliability of estimates of the activity.

The data presented in this report summarize responses by landowners concerning land cleared in the 48 conterminous States during 1975-77. Data include amount of land cleared, method of land clearing, land use prior to and following clearing, improvements in addition to clearing, reasons for clearing, cost of clearing, and source of funds used for clearing.

#### THE FOLLOW-ON SURVEY

The adequacy of the Nation's supply of agricultural land to meet future demands for agricultural production is a policy issue of growing concern. In the United States, the landowner is the ultimate decision-maker regarding the land he owns. This report provides only a statistical summary of the results of the Land Clearing Investment follow-on survey. A more detailed analytical report is planned that will examine the interrelationships between characteristics of landowners and land cleared during 1975-77. The report will provide

information useful in determining the factors important to the change of the supply of agricultural land. In the interim, preliminary results presented here will be useful for the continuing land policy review.

The screening question in the LOS used to identify sample points whose owners cleared land during the 1975-77 period was as follows:

13. Did you have CAPITAL EXPENDITURES during 1975-76-77 for any of the following improvements on land you own in the county?  
(Please check one box for each Item.)

	YES	NO
	1	2
.		
.		
.		
	047	
B. Clearing of brush or woodland for agricultural use? . . . . .	<input type="checkbox"/>	<input type="checkbox"/>
.		
.		
.		

This screening question produced 5,024 positive responses from the 36,710 sample points in the conterminous United States on which owners provided data on the LOS. Of the 5,024 positive responses to the screening question, 3,001 were selected to receive the Land Clearing Investment follow-on survey. Inclusion of all 5,024 records with a positive response to the screening question in the follow-on sample would have been desirable. However, to minimize respondent burden, no sample point was included in more than 3 of 8 follow-on surveys. 2/ Sample points from the LOS that qualified for more than 3 follow-ons were randomly assigned -- with known probability -- to only 3. Points qualifying for multiple follow-ons were first assigned to those follow-ons with the smallest

---

2/Selection of sample points for the Irrigation Investment and Irrigation Disinvestment follow-on surveys was handled separately.



number of responses to their respective screening question. Data for the selected points were then expanded to represent all points qualifying for inclusion in the follow-on survey.

A more detailed discussion of the survey method used in the multipart Resource Economic Survey is presented in Appendix 1 of Landownership in the United States.<sup>3/</sup> This discussion also included a description and examples of the expansion factors used in the LOS. All data presented on land clearing have been weighted, using the expansion factors developed for the LOS. Before the expansion factors were utilized for the follow-on data, they were adjusted for: 1) the rate of subsampling from the positive responses to the LOS screening question to the final follow-on sample, and 2) the non-respondents to the final follow-on sample. Use of this weighting procedure provides estimates of U.S. totals for all data concerning land cleared during the 1975-77 period.

Of the 3,001 points included in the final sample of the Land Clearing Investment follow-on survey, owners of 1,196 (40 percent) of the sample points responded with data concerning land cleared during the 1975-77 period. (A copy of the follow-on survey questionnaire is included in Appendix 1 of this report.) Owners of an additional 1,461 (49 percent) of the sample points returned questionnaires without data while 344 (11 percent) did not respond to the follow-on survey in any manner.

The number of respondents who indicated on the follow-on that they had not cleared land after indicating they had done so on the LOS screening question was quite high. One possible reason is that respondents with land in more than one county may not have realized that clearing data were to apply only to the

---

<sup>3/</sup>Supra note 1.

county in which the sample point was located. Instructions on the follow-on survey were explicit regarding clearing in the same county as the sample point; thus some respondents recognized a response to the follow-on was not in order. Some respondents may have changed their response in order to avoid the necessity of completing another questionnaire. Due to budget and time constraints there was no follow up to those responding negatively to the clearing follow-on survey after having answered positively to the screening question on the LOS.

A brief discussion of the principal survey findings is presented in the next section. The data are presented in tables following the survey findings. Some tables contain categories for "acres over reported" and "acres under reported." These categories were used in an accounting sense so that each landowner's response matches the total of all land reported to have been cleared by the landowner as shown in table 1. For example, acres over reported could occur if an owner made an error in distributing his recently cleared acres among alternative current uses such that the sum of the parts exceeded the total. Likewise, under reporting could occur if an owner did not account for all recently cleared acres in the distribution among alternative current uses.

Coefficients of variation were computed for selected data items presented in some of the tables. Coefficients of variation (CV's) provide a means of evaluating survey results. Since CV's express variation as a fraction of the sample mean, the smaller the CV the greater the reliability of the estimate. Therefore, a statistic with a CV of 10 percent is more reliable than one with a CV of 20 percent. In interpreting CV's, if an item has a CV of 10 percent, chances are 2 out of 3 that an interval constructed to represent a range of 90 to 110 percent of the survey value would contain the true population value. Chances are 19 out of 20, with a CV of 10 percent, that an interval constructed to represent a range of 80 to 120 percent of the survey value would contain the true population value.

## SURVEY HIGHLIGHTS

### Land Cleared, 1975-77

Over 10.6 million acres were cleared for agricultural use by 317,500 ownership units <sup>4/</sup> during 1975-77 in the U.S. (table 1). Thus the average size of all clearing projects was slightly over 33 acres. Projects where clearing was done during more than one year tended to be larger than single year projects, 57 acres vs. 22 acres. The most clearing, 4.1 million acres, was done during 1977. About 3.2 million acres was cleared during each of the other two years. The 95 percent confidence interval for total land cleared during 1975-77 is from 8.0 million to 13.3 million acres. A similar confidence interval estimate for ownership units is from 239,000 to 396,000.

Almost 57 percent of all the land cleared during 1975-77 was in the Southern Plains, Southeast, or Appalachian regions (table 2). Over one-half of the ownership units making the decision to clear land were from the Appalachian, Cornbelt, and Southeast farm production regions. Clearing projects in the Southern Plains and Mountains were the largest, averaging 123 acres and 99 acres, respectively. Clearing projects in both the Southeast and Delta averaged just under 50 acres in size. The average size of clearing projects in the remaining farm production regions ranged from 17 to 26 acres.

### Land Use Prior to Clearing

The most prevalent use of land prior to clearing was pasture, grass or rangeland (table 3). Almost 30 percent of the land was reported to be idle;

---

<sup>4/</sup>Owners may be individuals, groups of individuals, or legally recognized persons such as corporations, trusts, or estates. Ownership unit is used in this report as a convenient term which encompasses all types of legal entities having an ownership interest in land. It describes one decision making unit regardless of the number of individuals involved.



17 percent was in timber or pulp production. Land cover is one important factor in determining costs (discussed in a latter section) but the use categories of recreation, idle, and other do not have a necessary relationship to a particular type of cover. While much concern is expressed about the competition among land uses at the rural/urban fringe, this margin generally describes losses to agricultural uses. Since the net change is the focus of inquiry, it is necessary to determine uses prior to clearing. This will permit more accurate estimates of the status of land uses at a point in time as well as estimating change in uses over time. The largest average tracts cleared had been in pasture, grass or rangeland uses (over 53 acres). Tracts in forestry uses, idle, or other uses had an average size of between 16 and 25 acres.

#### Land Use Following Clearing

Almost half of the newly cleared land was used for improved pasture or range (table 4). About 30 percent of the land was used for crops; two-thirds in row crops and one-third small grains. The remainder was in other uses. It is probable that some of these lands were still in the process of being cleared and that some were replanted to timber, an option not specified on the questionnaire.

#### Patterns of Land Use Change

It is useful to seek patterns of land use change occurring with clearing investment. Over 594,000 acres originally used for timber or pulp production were converted to cropland, much of it used for row crops 5/ (table 5).

---

5/Land for row crops and small grains are largely, although not entirely, substitutes.

About 515,000 acres of timberland were converted to improved pasture and 421,000 acres were converted to other uses or the owner did not respond.

Pasture, grass, and rangeland use accounted for almost 4.5 million acres prior to clearing; over 3.0 million acres were converted to improved pasture or range. Another 1.0 million acres of pasture were converted to cropland and 425,000 acres were converted to other uses. Thirty-seven percent of the land classified as idle prior to clearing was converted to cropland, 34 percent was converted to improved pasture and 29 percent was converted to other uses.

The land use change categories refer mainly to agricultural uses. Thus, the total spectrum of possible change is not explored, e.g., urban, forestry, so a net change tableau can not be documented from these data.

#### Improvements in Addition to Clearing

About 57 percent of the owners reported making improvements in conjunction with clearing on slightly more than 50 percent of the cleared land (table 6). The most common improvements were liming, leveling, and installing drainage or irrigation systems.

#### Sale of Timber or Wood Products

Only about 6 percent of all ownership units which reported clearing land in 1975-77 sold timber or wood products as part of the clearing process. However, the most relevant group for comparison purposes are those ownerships where prior land use was reported as timber or pulp production. When limited to this group, about 24 percent of the ownership units sold some timber or wood products during the clearing process (table 7). These owners cleared about 48 percent of all the forestland cleared during 1975-77. The sale of



timber or wood products, or their attempted sale, appears to be positively related to the scale of the clearing operation. Owners who sold or attempted to sell timber products cleared an average of 42 and 40 acres, respectively. Owners who made no attempt to sell timber products or who did not respond cleared an average of 12 and 22 acres, respectively. Reasonable explanations are that considerable transaction costs occur in the timber market or that economies of size exist for the harvesting of timber.

#### Method of Clearing Trees and Brush

Bulldozers were the primary method of clearing on over 7 million acres (about 66 percent) of the land cleared in 1975-77 (table 8). Cutting of the trees and brush was the primary means of clearing on an additional 1.5 million acres although other methods may have been used in conjunction with cutting to finish the job. Owners using primarily chemicals cleared an average of 925 acres, significantly more than owners using other methods. Chemical use was highly concentrated in the Southern Plains on land which had been used for pasture. Thus it is likely chemical treatment is an important component of pasture renovation technology.

#### Method of Disposing of Unsold Wood Residue

Many owners reported their primary method of disposing of wood residue was burning (table 9). Relatively few owners reported chipping wood residue. Windrowing, leaving in place, and other methods of disposal were reported for about 12 percent of the acres, respectively. It is plausible these practices are intermediate steps to burning and/or burying.

### Cost of Clearing

About 261,000 ownership units invested 1.5 billion dollars clearing 8.6 million acres in the U.S. during 1975-77 (table 10). This is an average of \$175 per acre and about \$5,750 per ownership unit. Over 86 percent of the land cleared was done at a cost of less than \$250 per acre. Acreage cleared tended to decrease as the cost per acre increased (both per acre and per ownership unit) with the exception of the highest cost category, \$1500 and over. This category accounted for over 52 percent of the money spent in clearing land during 1975-77. This cost distribution must be viewed with caution since one record with a high cost per acre and a large expansion factor accounted for about 50 percent of all money invested in clearing. Question 1 of the questionnaire specifies land cleared for agricultural uses but almost all of the land cleared at a cost in excess of \$1500 per acre was in the use category "other" following clearing. Thus the possibility exists that much of the highest cost clearing was investment in nonagricultural uses.

### Source of Funds for Clearing Investment

Most funds invested in clearing were generated internally by the ownership units. Cash or savings accounted for over 62 percent of all investment and was used on about 62 percent of the cleared acres (table 11). Loans from banks or savings and loan association accounted for a large proportion of all loans and about 28 percent of all investment in clearing. However, as with the previous section, the data must be viewed with caution since one record accounted for a large share of bank loans.

### Factors Important in Clearing Investment Decision

The factor listed most frequently as important in the clearing decision was to improve the efficiency of farming operations (table 12). Efficiency

was the most important factor in all farm production regions. Availability of capital was the most important factor for owners of about 9 percent of the land cleared. Relatively few owners reported any of the other factors as important in the decision to clear land.

Not all survey participants answered all questions on the questionnaire (see appendix). Therefore, a "no response" category is shown in most tables. For some tables the number of "no responses" is small, indicating that the percentage distributions for ownership units or acres would not vary substantially even if a hundred percent response rate had been achieved. In other tables, however, the "no response" rate is high -- an indication that the responses to the question on which the table is based should be interpreted with care. Had all survey participants responded to the question, the estimates of ownership units or acres for the other categories in the table would be higher than shown. As an aid in interpretation of tabular data, the reader may want to recalculate the percentage distribution based only on the number of observations for which a positive response was obtained. If this is done however, interpretations of responses should be accompanied by the proviso that they are based only on the positive responses.

Table 1--Distribution of ownership units and acres by year cleared on land cleared for agricultural use in the United States, 1975-77

Years or combination of years	Ownership units		Acres	
	Thous.	Pct.	Thous.	Pct.
Cleared in 1975 only	67.7	21.3	1,418.5	13.3
Cleared in 1976 only	65.5	20.6	1,203.5	11.3
Cleared in 1977 only	80.0	25.2	2,070.4	19.5
Cleared during more than one year	104.3	32.9	5,941.5	55.9
Total	317.5	100.0	10,633.9	100.0
Total cleared in 1975	140.0 1/ (20.2)	44.1	3,276.4 (15.4)	30.8
Total cleared in 1976	162.4 (20.9)	51.2	3,208.4 (13.5)	30.2
Total cleared in 1977	155.6 (17.1)	49.0	4,149.1 (18.5)	39.0
Total	2/ 317.5 (12.3)	2/ 100.0	10,633.9 (12.6)	100.0

1/Numbers in parentheses are coefficients of variation for the estimates immediately above.

2/Owners may respond to more than one year; thus the individual years do not sum to the total.

Source: 1978 Resource Economics Survey.



Table 2--Distribution of ownership units and acres by farm production region on land cleared in ~~the~~ United States, 1975-77

Region	Ownership units		Acres	
	Thous.	Pct.	Thous.	Pct.
Northeast	31.7 1/ (18.7)	10.0	832.5 (63.2)	7.8
Lake	22.8 (16.9)	7.2	404.8 (19.1)	3.8
Cornbelt	55.6 (11.3)	17.5	936.0 (14.5)	8.8
Northern Plains	11.5 (27.6)	3.6	250.7 (31.8)	2.3
Appalachian	74.0 (36.5)	23.3	1,257.4 (28.6)	11.8
Southeast	39.1 (28.9)	12.3	1,899.1 (36.2)	17.9
Delta	17.8 (15.0)	5.6	839.3 (19.6)	7.9
Southern Plains	23.4 (16.9)	7.4	2,877.5 (19.9)	27.1
Mountain	7.3 (21.7)	2.3	724.0 (22.2)	6.8
Pacific	34.3 (50.8)	10.8	612.6 (37.8)	5.8
U.S.	317.5 (12.3)	100.0	10,633.9 (12.6)	100.0

1/Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.

Table 3--Distribution of ownership units and acres by land use prior to clearing on land cleared in the United States, 1975-77

Use	:	Ownership units		:	Acres	
		<u>Thous.</u>	<u>Pct.</u>		<u>Thous.</u>	<u>Pct.</u>
Forest	:	87.9	27.7	:	1,841.7	17.3
Pasture	:	91.6	28.8	:	4,821.2	45.3
Idle	:	127.8	40.3	:	3,149.1	29.6
Other	:	47.1	14.8	:	771.2	7.3
No response	:	.5	.2	:	59.7	.6
Under reported	:	3.2	1.0	:	7.7	.1
Over reported	:	1.1	.4	:	-16.7	-.2
Total	:	<u>1/</u> 317.5	100.0	:	10,633.9	100.0
	:	<u>2/</u> (12.3)		:	(12.6)	

1/Owners may respond to more than one use category; thus the individual uses do not sum to the total.

2/Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.

Table 4--Distribution of ownership units and acres by the 1978 land use on land cleared in the United States, 1975-77

1978 use	Ownership units		Acres	
	Thous.	Pct.	Thous.	Pct.
Row crops	96.4 <u>1/</u> (25.7)	30.4	2,113.6 (23.0)	19.9
Small grains	25.8 (19.9)	8.1	1,086.5 (22.5)	10.2
Pasture	150.4 (20.2)	47.4	4,942.1 (13.0)	46.5
Other	89.8 (24.8)	28.3	2,418.1 (37.5)	22.7
No response	4.5	1.4	44.5	.4
Under reported	3.1	1.0	30.0	.4
Over reported	.3	.1	-10.9	-.1
Total	<u>2/</u> 317.5 (12.3)	<u>2/</u> 100.0	10,633.9 (12.6)	100.0

1/Numbers in parentheses are coefficients of variation for the estimates immediately above.

2/Owners may respond to more than one use category; thus the individual uses do not sum to the total.

Source: 1978 Resource Economics Survey.

Table 5--Land use changes associated with clearing investment in the United States, 1975-77

Land use prior to clearing	Land use following clearing					
	Row crops	Small grain	Improved pasture or range	Other	No response	Total
	-----thousand acres-----					
Timber or pulp production	515.6	78.8	515.1	405.2	15.5	1,530.2
Pasture, grass or rangeland	435.8	598.9	3,005.2	425.5	14.5	4,479.9
Idle	737.7	261.5	913.5	781.5	10.8	2,705.0
Mixed <u>1/</u>	365.8	63.6	393.0	266.0	34.0	1,122.4
Other	47.4	58.1	95.5	535.1	.6	736.7
No response	11.2	25.6	19.7	3.2	--	59.7
Total	2,113.5	1,086.5	4,942.0	2,416.5	75.4	10,633.9

-- None reported.

1/Includes records where more than one prior use was listed.

Source. 1978 Resource Economics Survey.



Table 6--Distribution of ownership units and acres by improvements in addition to clearing on land cleared in the United States, 1975-77

Improvements	:	Ownership units		:	Acres	
		Thous.	Pct.		Thous.	Pct.
Irrigation	:	33.8	10.6	:	1,103.8	10.4
Drainage	:	25.4	8.0	:	1,191.3	11.2
Leveling	:	38.7	12.2	:	1,262.1	11.9
Terracing	:	20.5	6.4	:	403.1	3.8
Rock removal	:	38.2	12.0	:	502.1	4.7
Gully control structure	:	9.8	3.1	:	256.9	2.4
Grass waterways	:	17.3	5.5	:	282.7	2.7
Liming	:	73.0	23.0	:	1,755.7	16.5
Other	:	26.6	8.4	:	274.7	2.6
No response	:	136.9	43.1	:	5,189.3	48.8
Total	:	<u>1/</u> 317.5 <u>2/</u> (12.3)	<u>1/</u> 100.0	:	<u>1/</u> 10,633.9 (12.6)	<u>1/</u> 100.0

<sup>1/</sup>Owners may respond to more than one improvement for each acre; thus the individual improvements do not sum to the total.

<sup>2/</sup>Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.

Table 7--Distribution of ownership units and acreage by sales of timber on forest land cleared in the United States, 1975-77

Sales of timber or wood products	Ownership units		Acres	
	<u>Thous.</u>	<u>Pct.</u>	<u>Thous.</u>	<u>Pct.</u>
Timber or wood products sold	20.8	23.7	879.8	47.8
Unsuccessful attempt to sell	1.3	1.5	51.8	2.8
No attempt to sell	55.7	63.4	686.7	37.3
No response	10.1	11.4	223.4	12.1
Total	87.9	100.0	1,841.7	100.0

Source: 1978 Resource Economics Survey.

Table 8--Distribution of ownership units and acres by method of clearing on land cleared in the United States, 1975-77

Method of clearing	Ownership units		Acres	
	Thous.	Pct.	Thous.	Pct.
Bulldozer	1/ 223.5 (15.3)	70.4	7,002.5 (14.9)	65.9
Cut	73.7 (22.6)	23.2	1,477.5 (40.3)	13.9
Chemicals	.7 (31.5)	.2	648.8 (50.2)	6.1
Other	6.9 (65.7)	2.2	298.1 (37.1)	2.8
No response	12.7 (19.3)	4.0	1,207.0 (28.3)	11.3
Total	317.5 (12.3)	100.0	10,633.9 (12.6)	100.0

1/Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.

Table 9--Distribution of ownership units and acres by method of disposing of wood residue on land cleared in the United States, 1975-77

Method of disposal	Ownership units		Acres	
	Thous.	Pct.	Thous.	Pct.
Buried	26.7	8.4	595.9	5.6
Burned	179.9	56.7	4,570.1	43.0
Chipped	3.7	1.2	48.4	.5
Windrow	43.5	13.7	1,253.6	11.8
Left in place	22.0	6.9	1,403.6	13.2
Other	22.3	7.0	1,254.9	11.8
No response	19.4	6.1	1,507.4	14.1
Total	<u>1/</u> 317.5 (12.3)	100.0	10,633.9 (12.6)	100.0

<sup>1/</sup>Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.

Table 10--Distribution of ownership units, acres, and total investment by cost per acre of clearing operations on land cleared in the United States, 1975-77

Cost per acre	Ownership units		Acres		Investment	
	Thous.	Pct.	Thous.	Pct.	Million Dollars	Pct.
Less than \$250	169.5	65.0	7,426.0	86.4	451.3	30.0
\$250-499	43.2	16.6	495.3	5.7	172.3	11.5
\$500-749	25.6	9.8	117.7	1.4	63.0	4.2
\$750-999	4.5	1.7	35.9	.4	27.1	1.8
\$1000-1499	1.6	.6	4.6	.1	5.8	.4
\$1500 and over	16.4	6.3	518.1	6.0	783.8	52.1
Total reporting cost	280.8	100.0	8,597.6	100.0	1,503.3	100.0
No response	56.7		2,036.3			
Total	317.5		10,633.9			

Source: 1978 Resource Economics Survey.

Table 11--Distribution of ownership units, acres, and investment by source of funds for land clearing investments in the United States, 1975-77

Source of funds	Ownership units		Acres		Investment	
	Thous.	Pct.	Thous.	Pct.	Million Dollars	Pct.
Personal funds (cash or savings)	255.5	80.5	6,605.9	62.1	939.9	62.5
Loans from:						
Individual	7.8	2.4	275.3	2.6	14.5	1.0
Farmers Home Adm.	5.4	1.7	152.5	1.4	27.8	1.8
Production Credit Assn.	6.6	2.1	236.0	2.2	35.6	2.4
Federal Land Bank	2.1	.6	262.8	2.5	31.5	2.1
Bank/Savings and Loan	19.5	6.2	853.8	8.0	419.1	27.9
Insurance	.1	*	110.4	1.0	13.4	.9
Other	14.2	4.5	111.9	1.1	15.2	1.0
No response	34.9	11.0	1,468.7	13.8	6.3	.4
Total	<u>1/</u> 317.5 (12.3)	<u>1/</u> 100.0	10,633.9 (12.6)	100.0	1,503.3	100.0

\*Less than .05 percent.

1/Owners may respond to more than one funding source: thus the individual funding sources do not sum to the total.

2/Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.




Table 12--Distribution of ownership units and acres by decision factors on land cleared in the United States, 1975-77

Decision factors	Ownership units		Acres	
	Thous.	Pct.	Thous.	Pct.
Increased availability of labor	5.8	1.8	345.5	3.3
Increased availability of capital	15.8	5.0	975.8	9.2
Availability of suitable tenant	14.7	4.6	653.8	6.1
New permit for irrigation water	1.0	.3	209.7	2.0
Government project, e.g. flood protection drainage, or irrigation project	17.0	5.4	215.5	2.0
Changes in crop prices	6.7	2.1	451.0	4.2
More efficient farming operation	210.6	66.3	6,654.8	62.6
Other	30.5	9.6	483.7	4.5
No response	15.4	4.9	644.1	6.1
Total	317.5 1/(12.3)	100.0	10,633.9 (12.6)	100.0

1/Numbers in parentheses are coefficients of variation for the estimates immediately above.

Source: 1978 Resource Economics Survey.

 Crop  
Reporting  
Board  
Economics, Statistics, &  
Cooperatives Service  
U.S. Department  
of Agriculture  
Washington, D.C.  
20250

# LAND CLEARING INVESTMENT SURVEY

Form Approved  
O.M.B. Number 40-S-77043  
Approval Expires 9-30-79

001

LIST CODE 947

Dear Land Owner:

Your assistance is needed to provide information about land clearing investments during 1975, 1976 or 1977 on land you had *either a full or part ownership interest in* on January 1, 1978 in the COUNTY SHOWN IN THE ADDRESS LABEL.

The information you provide will remain confidential and will be used only in combination with other reports to develop summaries about land clearing investments throughout the United States. Your response to this questionnaire is completely voluntary and not required by law.

Your returning the completed questionnaire by mail will be greatly appreciated and will help hold down survey cost. Additional contacts will be made with those not returning the questionnaire by mail to the extent possible to insure a representative sample is obtained.

Respectfully,



BRUCE M. GRAHAM, Chairman  
Crop Reporting Board



1. How many acres of land that you owned January 1, 1978 in the COUNTY LISTED IN THE ADDRESS LABEL were cleared for agricultural use during the following years?

A. Acres cleared in 1975. . . . . ACRES  
 B. Acres cleared in 1976. . . . . ACRES  
 C. Acres cleared in 1977. . . . . ACRES  
 D. TOTAL ACRES cleared (Sum of A+B+C) ACRES

002
003
004
005

*NOTE: Acres reported in Item 1 are the acres referred to in the remainder of the questionnaire.*

*If you did not have any investments for clearing during 1975, 1976 or 1977, please sign the last page and return this questionnaire in the enclosed envelope.*

2. How many acres of the land cleared were in the following uses before clearing? (Enter the acres by each use)

A. Timber or pulp production. . . . . ACRES  
 B. Pasture, grass or rangeland. . . . . ACRES  
 C. Recreation. . . . . ACRES  
 D. Idle. . . . . ACRES  
 E. Other (Specify \_\_\_\_\_). . . . . ACRES

007
008
009
010
011

3. How many acres of this cleared land were in the following uses during 1978?

A. Cropland, row crops. . . . .	ACRES	051
B. Cropland, small grains. . . . .	ACRES	052
C. Improved pasture or range. . . . .	ACRES	053
D. Other (1) (Specify _____ ) . . . . .	ACRES	054
(2) (Specify _____ ) . . . . .	ACRES	055

4. What further improvements have been made on this cleared land? *(List acreages of cleared land affected by each improvement.)*

A. Irrigation. . . . .	ACRES	101
B. Drainage. . . . .	ACRES	102
C. Leveling. . . . .	ACRES	103
D. Terracing. . . . .	ACRES	104
E. Rock Removal. . . . .	ACRES	105
F. Gully control structure. . . . .	ACRES	106
G. Grass waterways. . . . .	ACRES	107
H. Liming. . . . .	ACRES	108
I. Other (Specify _____ ). . . . .	ACRES	109

5. Was an attempt made to sell any of the timber or scrap wood immediately before or when cleared? (Check one - A, B or C)

OFFICE  
USE

A. ☐ <sup>1</sup> No attempt to sell because: (Check reason)

150

- |                                       |   |
|---------------------------------------|---|
| <input type="checkbox"/> <sup>1</sup> | Time would not permit                   |
| <input type="checkbox"/> <sup>2</sup> | No local market                         |
| <input type="checkbox"/> <sup>3</sup> | Wood or residue had no commercial value |
| <input type="checkbox"/> <sup>4</sup> | Other (Specify _____ )                  |

151

152

B. ☐ <sup>2</sup> Attempted, but did not sell because: (Check reason)

- |                                       |   |
|---------------------------------------|---|
| <input type="checkbox"/> <sup>1</sup> | No market                               |
| <input type="checkbox"/> <sup>2</sup> | Price for product not high enough       |
| <input type="checkbox"/> <sup>3</sup> | Wood or residue had no commercial value |
| <input type="checkbox"/> <sup>4</sup> | Other (Specify _____ )                  |

153

C. ☐ <sup>3</sup> Sold

Please list - percent of timber and wood sold  
- percent of scrap or residue sold

155	%
156	%

6. What was the PRIMARY METHOD of clearing the trees or brush which was not commercially harvested? (Check one)

- |                                       |                        |
|---------------------------------------|------------------------|
| <input type="checkbox"/> <sup>1</sup> | Bulldozed or uprooted  |
| <input type="checkbox"/> <sup>2</sup> | Cut down               |
| <input type="checkbox"/> <sup>3</sup> | Chemically treated     |
| <input type="checkbox"/> <sup>4</sup> | Other (Specify _____ ) |

157

158

7. What was the PRIMARY METHOD of disposing of wood residue which was not sold? (Check one)

- |                                       |                        |
|---------------------------------------|------------------------|
| <input type="checkbox"/> <sup>1</sup> | Buried                 |
| <input type="checkbox"/> <sup>2</sup> | Burned                 |
| <input type="checkbox"/> <sup>3</sup> | Chipped                |
| <input type="checkbox"/> <sup>4</sup> | Windrow                |
| <input type="checkbox"/> <sup>5</sup> | Left in place          |
| <input type="checkbox"/> <sup>6</sup> | Other (Specify _____ ) |

159

8. What was the total cost of clearing operations on your land in this county during the past 3 year period?

TOTAL DOLLARS

070
-----

9. What percent of the clearing costs came from the following sources:

PERCENT

A. Personal funds (cash on hand or savings) . . . . .

073

B. Loan(s) from:

Individual. . . . .

074
-----

Farmers Home Administration (FmHA). . . . .

075
-----

Production Credit Association (PCA). . . . .

076
-----

Federal Land Bank. . . . .

077
-----

Other banks or savings and loan association. . . . .

078
-----

Insurance Company. . . . .

079
-----

Small Business Administration (SBA). . . . .

080
-----

C. Other (Specify) \_\_\_\_\_ )

080
-----

080
-----


081
-----

TOTAL

081
-----

100%
------

10. Please check all of the following factors that were important in your decision to clear this land of brush or trees for agricultural use.

A. Increased availability of labor. . . . .	087
B. Increased availability of operating or investment capital. . . . .	088
C. Availability of a suitable renter or tenant. . . . .	089
D. New permit for irrigation water. . . . .	090
E. Flood protection, drainage improvement or irrigation water provided by government project. . . . .	091
F. Changes in crop prices. . . . .	092
G. More efficient farming operation. . . . .	093
H. Other ( <i>Specify</i> _____ )  . . . . .	094

Reported by \_\_\_\_\_ Date \_\_\_\_\_  
Phone Number ( \_\_\_\_\_ ) \_\_\_\_\_  
Area Code

*The enclosed envelope does not require a stamp.*



APPENDIX 2

TEN FARM PRODUCTION REGIONS

Northeast

Connecticut  
Delaware  
Maine  
Maryland  
Massachusetts  
New Hampshire  
New Jersey  
New York  
Pennsylvania  
Rhode Island  
Vermont

Lake

Michigan  
Minnesota  
Wisconsin

Corn Belt

Illinois  
Indiana  
Iowa  
Missouri  
Ohio

Northern Plains

Kansas  
Nebraska  
North Dakota  
South Dakota

Appalachian

Kentucky  
North Carolina  
Tennessee  
Virginia  
West Virginia

Southeast

Alabama  
Florida  
Georgia  
South Carolina

Delta

Arkansas  
Louisiana  
Mississippi

Southern Plains

Oklahoma  
Texas

Mountain

Arizona  
Colorado  
Idaho  
Montana  
Nevada  
New Mexico  
Utah  
Wyoming

Pacific

California  
Oregon  
Washington

NATIONAL AGRICULTURAL LIBRARY



1022523205

\* NATIONAL AGRICULTURAL LIBRARY



1022523205